

ABSTRACT

A simple-structure, small-size, inexpensive optical isolator mounted in an amplifier. The PMD and PDL are reduced to desired numerical levels to improve the characteristics. The optical isolator is composed of two double refraction elements, a 45 DEG Faraday rotator, a magnet, a lens, and a total reflection member. The directions of crystal axes of the two double refraction elements and the direction of the rotation of the Faraday rotator are appropriately set. Therefore, going-returning optical paths where incident unpolarized light is separated into ordinary light and extraordinary light, totally reflected by a total reflection member, and outputted are formed. The direction of the crystal axis with respect to the direction of the normal on the element surface of either of the two double refraction elements and the thickness in the direction of the normal on the element surface are corrected.